R E P O R T R E S U M E S

ED 014 921 FL 000 292

THE NON-SPECIALIST TEACHER IN FLES.

BY- JOHNSON, CHARLES E. AND OTHERS
NATIONAL FED. OF MODERN LANGUAGE TEACHERS ASSN.

PUB DATE FEB 67

EDRS PRICE MF-$0.25 HC-$0.32 6P.

DESCRIPTORS- *INSTRUCTIONAL TELEVISION, *FLES PROGRAMS, *LANGUAGE RESEARCH, *SPANISH, *FLES TEACHERS, AUDIOLINGUAL SKILLS, CLOSED CIRCUIT TELEVISION, EXPERIMENTAL TEACHING, PROGRAM EVALUATION, STATISTICAL DATA, TAPE RECORDINGS, TEACHING TECHNIQUES, ACHIEVEMENT, EXPERIMENTAL GROUPS, CHAMPAIGN, ILLINOIS,

A 3-YEAR EXPERIMENT, BEGUN IN 1959 IN THE CHAMPAIGN, ILLINOIS PUBLIC SCHOOLS, WAS DESIGNED TO DETERMINE THE EFFECTIVENESS OF NONSPECIALISTS IN FLES PROGRAMS. THE TWO CONTROL CLASSES IN THE EXPERIMENT WERE TAUGHT BY A SPECIALIST WHO MODELED, APPRAISED, AND REPRESENTED THE CULTURE OF THE LANGUAGE IN AN AUDIOLINGUALLY ORIENTED CLASSROOM SITUATION, WHILE THE TWO EXPERIMENTAL CLASSES, TAUGHT BY NONSPECIALISTS, HAD THEIR LEARNING ACTIVITIES CENTERED ON CLOSED CIRCUIT TELECASTS AND PROFESSIONALLY PREPARED AND COORDINATED TAPES RECORDED BY NATIVE INFORMANTS. ALTHOUGH THE CONTROL GROUPS SURPASSED THE EXPERIMENTAL GROUPS IN THE AREAS OF PRONUNCIATION, ORAL READING, AND IMMEDIACY AND APPROPRIATENESS OF RESPONSE ON THE PICTORIAL, TAPED, AND PERSONAL EVALUATION TESTS, THE EXPERIMENTAL GROUPS PERFORMED SUBSTANTIALLY ABOVE THE ACHIEVEMENT LEVEL OF 60 PERCENT OF THE MEAN RAW SCORE OBTAINED BY THE CONTROL GROUP, WHICH HAD PREVIOUSLY BEEN DETERMINED AS ACCEPTABLE. THE RESULTS SUPPORTED THE HYPOTHESIS THAT GENERAL ELEMENTARY TEACHERS, WITH THE AID OF A SPECIALLY DESIGNED PROGRAM AND NEWER MEDIA, CAN GUIDE FLES STUDENTS TO A LISTENING AND READING COMPREHENSION LEVEL COMPARABLE TO THAT ACHIEVED BY CLASSES TAUGHT BY SPECIALISTS, BUT CANNOT TRAIN STUDENTS ADEQUATELY TO RESPOND IN CONVERSATIONAL SETTINGS. THIS ARTICLE APPEARED IN THE "MODERN LANGUAGE JOURNAL," VOLUME 51, NUMBER 2, FEBRUARY 1967, PAGES 76-79. (AB)

Volume LI FEBRUARY • 1967 Number 2

ED014921
FL 000 292

The MODERN LANGUAGE JOURNAL

FOUNDED IN 1916

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Published by
THE NATIONAL FEDERATION OF MODERN LANGUAGE TEACHERS ASSOCIATIONS

Editorial Office: UNIVERSITY OF WISCONSIN-MILWAUKEE, MILWAUKEE, WIS.

Business Office: CURTIS REED PLAZA, MENASHA, WISCONSIN, OR
13149 CANNES DRIVE, ST. LOUIS, MISSOURI 63141

The Modern Language Journal

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THE MODERN LANGUAGE JOURNAL is published 8 times a year, monthly from January through May and from October through December, by the National Federation of Modern Language Teachers Associations, Inc.

The subscription price (due and payable in advance) is $4.00 a year: single copy, 75 cents, postage free. Foreign subscriptions (including Canada) are $4.50 a year net, in U.S.A. funds (New York Draft or International Money Order); single copy, 75 cents.

All communications for the editors, books for review, and manuscripts should be addressed to Robert F. Roeming, University of Wisconsin-Milwaukee, Milwaukee 11, Wisconsin. In publishing manuscripts preference will be given to subscribers.

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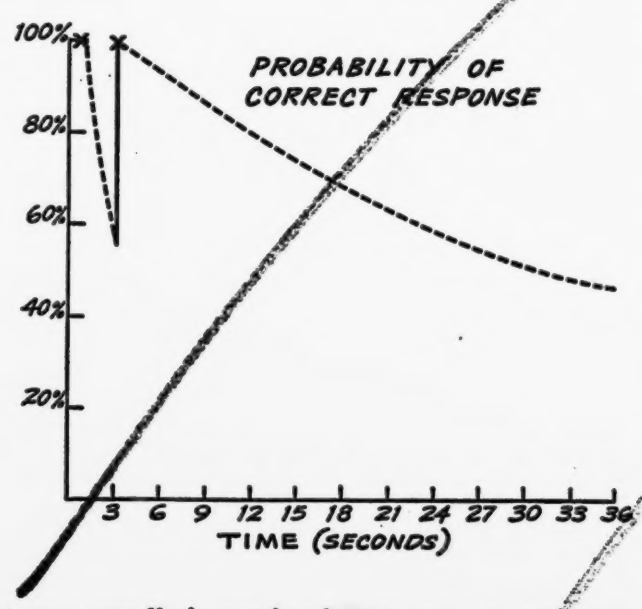
GRAPH 3



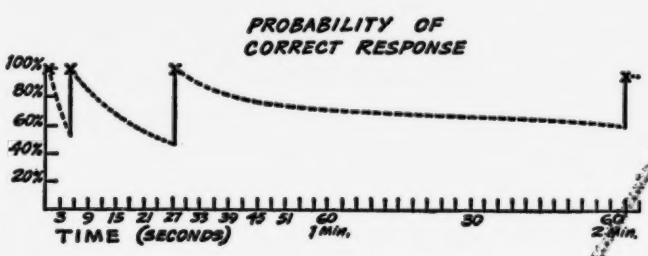
tween recalls is getting longer; you are remembering for longer and longer periods each time. This fact—that each time a memory is "boosted" it retains its strength longer than the time before—is the keystone upon which to build foreign language materials. There is no generally accepted term for such a schedule, but I have called it "*graduated interval recall.*"

What is the exact nature of this schedule? No simple answer is possible, for it would be foolish to think of using one and the same schedule for all types of words and structures. A short, frequent cognate word (e.g., *le garage*) might require very few recalls, while a long infrequent non-cognate (e.g., *ahurissement*) might require a great many. Still, the evidence both from my programming experience and from the findings of experimental psychology[3] seems to indicate that there is an "ideal" schedule one can keep in mind and adapt to fit the circumstances. This schedule is exponential in form. That is, if the first interval (between the original presentation and the first recall) is, say, five seconds then next interval may need to come $5^2=25$ seconds later, the next one $5^3=125$ seconds (2:05) later, the next one $5^4=625$ seconds (10:25) after that, and so on. The first interval can roughly be defined as the time that elapses before the student's probability of remembering the item drops to some arbitrary level, say 60%.

This suggests in practical terms that the teacher should recall the item very frequently right after it is first presented, though interspersed with other activities which take the student's mind off it between recalls. Then he should continue recalling it with decreasing frequency during the succeeding days and weeks. It seems he can not only insure maximum retention in this fashion, but that he may actually save time as well, by eliminating most of the repetition usually given at the beginning in hopes of "drumming it in." The principle advanced here argues against massing large numbers of repetitions when the word is first presented (except of course as may be required for pronunciation purposes), and in favor of spreading them out in a way that approximates the pattern just discussed.

If the exponential relationship can be believed—and the evidence indicates it is at least on the right track—then we make the following discovery. The tenth recall of our Greek word will not take place until 5^{10} or 9,765,625 seconds after the first. That's about 113 days or more than four months later. And that one should hold the student for well over a year.

GRAPH 4



[3] See, for example, R. S. Woodworth and H. Schlosberg, *Experimental Psychology*, New York: Holt, Rinehart and Winston, 1954, pp. 726 ff.; and C. E. Osgood, *Method and Theory in Experimental Psychology*, New York: Oxford University Press, 1953, pp. 554 ff.

*The Non-Specialist Teacher in FLES**

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FRED P. ELLISON, *University of Texas;* MIGUEL A. RIESTRA, *University of Puerto Rico*

THE main purpose of this study was to determine the effectiveness of nonspecialist teachers in helping elementary school pupils learn a second language when the instructional program is especially designed and presented by newer educational media.

I. PROCEDURE

Pupils in five classrooms of the Champaign (Illinois) public elementary schools were involved in the study for a period of three years. Four of these classroom groups began studying Spanish in the fall of 1959 when they were just beginning the fourth grade and continued until they had completed the sixth grade. Two classrooms were taught by specialist teachers of Spanish using procedures, materials, and equipment suitable in situations in which a teacher is thoroughly familiar with the language. Two other classrooms, reasonably comparable to the aforementioned, were guided by teachers unfamiliar with the Spanish language. These other groups were taught by procedures involving the use of closed circuit telecasts, and tape recordings prepared by language specialists and spoken by natives. Once each week these children received instruction by means of television and the instruction on the remaining days was given through tape recordings. The fifth group-a pilot class, was one semester ahead of the others in Spanish instruction. This group provided information as to the suitability or value of particular content, materials, and methods before they were used with the experimental and control groups. This fifth group was taught by a specialist teacher of Spanish.

The two classes which received three years of Spanish instruction from specialist teachers are referred to as the control group. Initially, it contained 54 pupils. However, due to normal attrition only 32 were still enrolled at the end of the three years. The two classes guided by nonspecialists through Spanish lessons presented by telecasts and tape recordings, is referred to as the experimental group. It initially contained 51 pupils, but, by the end of the study was reduced to 34 pupils.

As regards sex differences between the two groups at the close of the study, the control group included 14 boys and 18 girls, and the experimental group 15 boys and 19 girls. A *chi*-square test of the extent to which the two groups differed with regard to distribution of boys and girls resulted in the decision that there was no significant difference between these two groups with regard to this characteristic (*chi*-square = .009, df = 2, P is greater than .90).

At the close of the study the experimental and control groups were also reasonably comparable in chronological age, intelligence quotient, and mental age. Table I shows this comparison.

In general, the audio-lingual approach to teaching foreign languages was used with all groups. For example, the pupils were taught skills in listening comprehension and speaking facility during the first two years and did not begin reading in the language until their third year. They were never taught grammar in a formal manner nor were they required to engage in systematic phonetic or structural analysis of the language. The content was primarily speech patterns used in conversational settings and aspects of Hispanic culture were interwoven with the teaching of language skills.

Although the general approach was the same with all groups, the specific methods and techniques used with the experimental and control groups differed obviously. The language specialist had the advantage of personal contact with immediate feedback. He could be model, critic, judge, and a representative of the culture of the

* This summary is adapted from the content of (authors listed above) *The Development and Evaluation of Methods and Materials to Facilitate Foreign Language Instruction in Elementary Schools*, Urbana, Illinois: University of Illinois, Foreign Language Instruction Project, 1963; this research was supported by a grant from the U. S. Office of Education, Department of Health, Education, and Welfare under Title VII of the National Defense Act of 1958.

TABLE I

COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS WITH REGARD TO CHRONOLOGICAL AGE, INTELLIGENCE QUOTIENT, AND MENTAL AGE AT THE END OF THE THIRD YEAR OF INSTRUCTION IN SPANISH

Characteristic	Experimental N=34		Control N=32		F	t	Probability
	Mean	S.D.	Mean	S.D.			
Chronological Age	144.94	3.94	145.37	5.03	1.63	−.387	.70
Intelligence Quotient	121.32	13.82	117.53	14.31	1.07	1.09	.29
Mental Age	175.58	17.97	170.81	20.83	1.34	1.01	.32

language. He could vary from his teaching plan when his judgment suggested it would be wise to do so.

On the other hand, the experimental method had the advantages implicit in the use of newer educational media. In addition, activities were especially designed by staff conferences concerned with making the lesson highly interesting. Furthermore, various supplemental audio-visual materials were carefully prepared by language specialists, curriculum workers, and professional artists for each presentation. Since all materials were written and recorded in advance, the program was tightly structured. However, to avoid errors in estimating the extent to which newer learnings could be introduced, they were seldom prepared more than two weeks in advance.

The television lessons were designed to present new learnings as well as some reviews; thus, they generally set the pace for the activities to be undertaken by the tape recorded lessons which followed.

The tape recorded lessons all differed from each other and each was limited to a time length of eight to ten minutes in order to be adaptable to a twenty-minute period when special techniques for pausing, stopping, or replaying parts of the tapes were employed. Also, the tapes were structured to provide a step-by-step continuous learning of new elements as well as review of the old. Much of the energy of the specialist teacher staff as well as curriculum workers and trained technicians was devoted to the development of these tape recorded lessons, so that a continuous, structured learning sequence was created.

A teacher's manual was prepared for each lesson. This manual contained a list of materials which would be needed in conducting the lesson, a running dialogue of what was being presented on television or on the tape recording, a translation into English of all Spanish phrases used, and, in the case of the tape recorded lessons, instructions as to when to stop the tape and what supplemental activities to undertake. The manual was for the teacher only. That is, the teachers were instructed not to allow the children to read these manuals. They were also required to limit their preparation for each lesson to from five to ten minutes.

Evaluation was centered on data obtained when pupils in all groups were examined at the close of each semester on their progress in learning the foreign language. Test scores of pupils in the experimental and control groups were compared to determine the extent to which the pupils, guided in their instruction through television and tape recordings by teachers unfamiliar with the language, were able to acquire equal status with those who received instruction from specialist teachers using neither of these media. Evaluation involved the use of pictorial tests, tape recordings and individualized interviews. Scoring was done by language specialists not directly involved in the study. Statistical analysis involved the use of the *t*-tests of the differences in mean scores.

II. MAJOR FINDINGS

The differences between the mean Spanish achievement test scores of the control and experimental groups tended to consistently and accumulatively favor the control group over the three-year period.

At the end of the three years, the control

TABLE II

COMPARISON OF MEAN SCORES, IN PERCENTAGES, OF EXPERIMENTAL AND CONTROL GROUPS AT THE END OF THE THIRD YEAR OF INSTRUCTION IN SPANISH

Spanish Test	Experimental Group N=34	Control Group N=32	Difference in Favor of Control Group	Percent to Which Experimental Group Achieved as High as Control Group
Listening Comprehension	76.95	81.46	4.51	94.46
Reading Comprehension	64.50	69.37	4.87	92.98
Immediacy of Response	48.43	70.00	21.57	69.19
Appropriateness of Response	50.70	68.77	18.07	73.72
Pronunciation	83.73	94.70	10.97	88.41
Oral Reading	72.26	86.69	14.43	83.35
Composite Score	67.76	79.11	11.35	85.65

group received higher mean scores than the experimental group on all Spanish achievement tests. However, their mean scores on these tests ranged from 69% to 94% of those obtained by the control group. The differences in means for the composite scores and for four of the sub-tests (immediacy of response, appropriateness of response, pronunciation, and oral reading) were regarded as significant. The differences in mean scores on the listening and reading comprehension sub-tests were not regarded as significant. Tables II and III summarize these data.

III. GENERALIZED CONCLUSIONS

When the study was begun the co-directors anticipated that at the end of the three-year period the group taught by specialist teachers would obtain higher mean scores than the group guided by non-specialists. It was, therefore, necessary to decide in advance what level of achievement would have to be obtained by the experimental group for results of the experiment to be regarded as either successful or unsuccessful. The decision was that if the experimental group obtained mean raw scores which were at least sixty percent of the mean raw scores earned by the control group, then the experiment would be regarded as successful in that the use of the instructional program would be warranted in situations where qualified specialist language teachers were unavailable. On the other hand, it was decided that if the results yielded mean raw scores below the sixty percent level, the experiment would be regarded as unsuccessful and that the use of the instructional program would not be recommended. The findings revealed that in all tests the experimental group obtained mean raw scores substantially above the established sixty percent level.

The co-directors thus arrived at the following

TABLE III

COMPARISON OF MEAN SCORES AND STANDARD DEVIATIONS OF EXPERIMENTAL AND CONTROL GROUPS AT THE END OF THE THIRD YEAR OF SPANISH INSTRUCTION

Spanish Test	Experimental N=34		Control N=32		F	t	Probability
	Mean	S.D.	Mean	S.D.			
Listening Comprehension	48.30	9.16	51.80	6.11	2.19	−1.40	.17
Reading Comprehension	48.30	4.47	51.80	3.87	1.33	−1.41	.16
Immediacy of Response	45.50	6.62	54.80	5.84	1.28	−4.19	.001
Appropriateness of Response	45.30	5.78	55.00	3.86	2.23	−4.46	.001
Pronunciation	46.60	5.25	53.80	2.25	5.41	−3.27	.001
Oral Reading	45.90	6.47	54.30	4.19	2.38	−3.74	.001
Composite Score	46.10	33.65	54.10	21.00	2.57	−3.51	.001

generalized conclusions: General elementary school teachers with no special training in a particular foreign language can, with a minimum of daily preparation, successfully guide their pupils in learning that language, *provided:* (1) that the instructional program be of a particular design, (2) that efficient use is made of newer educational media, and (3) that the level of achievement expected of the pupils is relatively lower in some aspects of language learning than that which would have been achieved had the pupils been taught the same content by well-qualified specialist teachers.

Secondarily, but related to the conclusion already stated, is another which evolves from the finding that there were certain kinds of language learnings which were more effectively accomplished than others by the pupils in the experimental group: When elementary school pupils are guided in learning a foreign language by general elementary teachers who have no training in that language, through lessons presented by newer educational media (television and tape recordings), they acquire a listening and reading comprehension of that language to an achievement level which is comparable to that acquired by pupils who have been taught by specialist language teachers presenting similar content in person rather than by new educational media. However, the achievement level of these pupils in responding orally in conversational settings is significantly lower than that experienced by pupils taught by specialist teachers.

IV. Limitations of the Conclusions

Since erroneous impressions could evolve from making broad interpretations of the generalized conclusions, certain limitations should be kept in mind by the reader as he reflects on them.

These conclusions are based on the findings of this one study which has at its core a particular instructional program, and it is the consensus of the co-directors that the key to the success or failure of any such experiment is to be found in the curriculum and its instructional pattern. It, therefore, bears emphasis that the generalized conclusions resulting from this study can make no claims for other foreign language instructional programs which are similar in purpose but different in content and method of presentation.

The language taught was Spanish and it has been assumed that similar results would have been obtained had some other language been used. However, this cannot be said with certainty until it has been tried experimentally.

The teachers of the experimental group were elementary school teachers who had general teaching experience but initially had no knowledge of the language and no experience or training in teaching it. However, at the close of the three years of the experiment these teachers had acquired some knowledge of the language, along with experience in using modern foreign language teaching methods. Although it is not established by this study, one might assume that should those same teachers repeat this experience over another three-year period, their pupils at the close of that period might obtain higher levels of achievement than did the experimental group reported in this study. If so, then the experimental program described herein might be even more highly regarded as a means of bringing effective foreign language instruction to pupils in classroom situations where specialist teachers are unavailable.